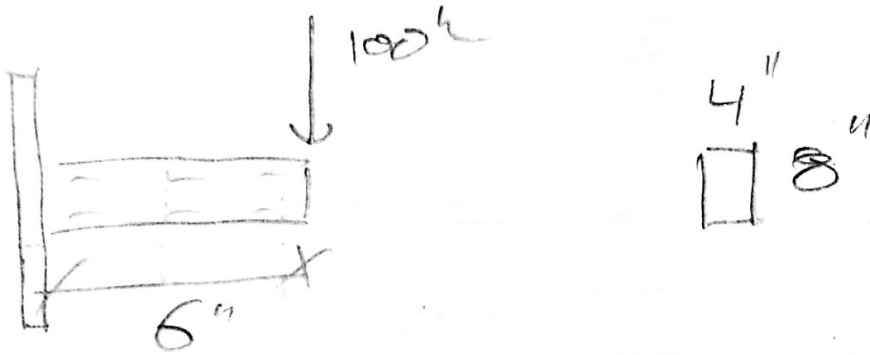


## ECCENTRIC WELDS - 1



$$M_o = 600 \text{ k-in}$$

$$I_x = \frac{2 \times 8^3}{12} + 2 \times 4 \times 4^2 =$$

$$\frac{2 \times 8^3}{12} + 2 \times 4 \times 4^2 = 213 \text{ in}^3$$

$$f_v = 100 \text{ k} / 24 \text{ in} = 4.2 \text{ k/in}$$

$$f_H = \frac{M_o}{I} = \frac{600 \times 4 \text{ in}}{213} = 11.2 \text{ k/in}$$

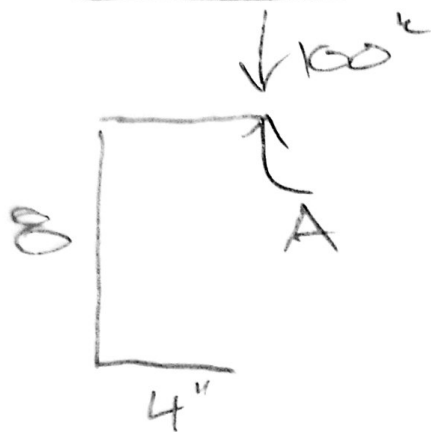
could have used  $M/S$

$$f_{or} = \sqrt{4.2^2 + 11.2^2} = 11.9 \text{ k/in}$$

$$11.9 = 1.392 D \quad \ell = 1 \text{ in}$$

$$D = 8.5 \rightarrow 9 \quad 9/16 \text{ in FILET.}$$

## ECCENTRIC WELDS - 2



$$C_{gx} = \frac{4'' \times 2 \times 2'' + 8'' \times 1 \times 0''}{8'' + 4'' + 4''}$$

$$C_{gx} = 1''$$

$$M_v = 100^k \times 3'' = 300 \text{ k-in}$$

$$I_p = I_x + I_y$$

$$I_x = \frac{8^3}{12} + 4 \times 2 \times 4^2 = 171 \text{ in}^3$$

$$I_y = \frac{4^3}{12} + 4 \times 1^2 \times 2 + 8 \times 1^2 = 27 \text{ in}^3$$

$$I_p = 171 + 27 = 198 \text{ in}^3$$

$$f_v = 100^k / 6'' + \frac{M_v h}{I}$$

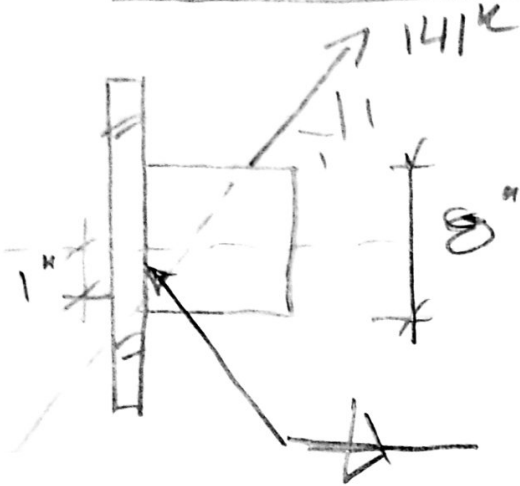
$$100/6 + 300 \times 3'' / 198 = 10.8 \text{ k/in}$$

$$f_H = \frac{M_v}{I} = \frac{300 \times 4''}{198} = 6.1 \text{ k/in}$$

$$f_{max} = \sqrt{10.8^2 + 6.1^2} = 12.4 \text{ k/in}$$

$$12.4 = 1.37 \text{ ADK} \quad D = 88 \quad 9/16'' \text{ FUEL}$$

### ECENTRIC WELDS - 3



$$P_V = 100^k$$

$$M_o = 100^k \times 1^{\text{in}} = 100 \text{ k-in}$$

$$P_H = 100^k$$

$$S_{\text{weld}} = 2 \times d^2 / 6 = 2 \times 8^2 / 6 = 21.3$$

$$f_V = 100^k / 16 = 6.25 \text{ k/in}$$

$$f_H = 100^k / 16 + M / S$$

$$f_H = 100 / 16 + 100 / 21.3 = 10.9 \text{ k/in}$$

$$f_{\text{TOT}} = \sqrt{6.25^2 + 10.9^2} = 12.4 \text{ k/in}$$

$$12.4 = 1.39 \text{ DRL}$$

$$D = 29 \rightarrow 9/16^{\text{th}} \text{ weld}$$